



Safety Sigma Director's Cut

A Compilation of the Director's Articles (Winter 2012 – Spring 2015)

From the Director: Command Culture, Leadership, and Warfighting (Winter 2012 Issue)

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What is command culture? One way it can be defined is by behavioral norms or "how we do business around here." There are numerous command/organizational cultures. There are different cultures within the different services, within the different T/M/S and within squadrons on the same flight line.

What is a "good" command culture? As you evaluate whether your command has a "good" culture, think about this. As the Navy and Marine Corps team continually focuses on warfighting ability in a period of reduced budgets and increased OPTEMPO, leaders must find every way to maintain maximum combat readiness. The implication for our command culture these days is to maximize warfighting effectiveness at reduced cost. One significant way to reduce cost and increase readiness is to eliminate damage to equipment, personal injuries and/or fatalities resulting from human error. What we are talking about is maximizing human performance while minimizing the Blue Threat.

In *Charting a Course to Command Excellence* we find that we can maximize the performance of the Sailors and Marines within our commands through the pursuit of professionalism and command excellence. Command excellence can be attained by ensuring we are "brilliant on the basics" when it comes to our people, command relationships and command activities. "Brilliant on the basics" regarding command activities comes down to understanding what our instructions, SOP's and policies are and why they are that way (what risk are the procedures mitigating and how do the procedures make us more combat-effective).

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Once we review and establish what the "book" says, we can focus on "by-the-book" procedures. We focus on by-the-book procedures by thorough training. Thorough training ensures every member of the command understands what the procedures are. The book establishes what the standard is, how we do business in the command and what we want our behavioral norms to be. In turn,

these define our ideal command culture. That's the ideal culture, but what about command climate and how does it affect culture?

Through the treatment of our people and the relationships that we establish, the command climate is defined. A good command climate ensures a high level of motivation, commitment, morale, pride, teamwork, and sense of mission. It shapes the Sailors' and Marines' attitudes and values about the command and the mission. These

attitudes and values determine how well Sailors and Marines buy-in to the command culture that is broadcast in standards and procedures. If the Sailors and Marines possess an attitude that does not value following procedures and meeting standards, but instead values shortcuts and work-arounds, then the established behavioral norms set by the commander will not be followed. This is a poor command climate, because the climate will not provide the attitude and motivation to buy-in to the ideal command culture. Eventually command culture will suffer and a new culture will form. What emerges will be different than the ideal culture which was delineated in commander's policy and procedures. In turn, risk management and combat readiness will degrade because the command climate did not provide the impetus to rise to the level of excellence the ideal command culture calls for.

This is how the leadership of the commander has a direct and immediate tie to "how we do business around here." The commander's leadership influences attitudes and values. The commander "owns" the command climate. How does a commander ensure a positive command climate that can enable the ideal command culture? How does the commander change a poor command climate? The climate is changed, first through policy then by walking the talk, being brilliant on the basics, empowering people and fostering positive relationships. By ensuring a positive command climate the commander maintains a "good" command culture and achieves maximum warfighting ability while minimizing the Blue Threat, or, as we say in the SAS...."I gotta have more cowbell!"

From the Director: **ETTO (Spring 2013 Issue)**

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In the book The ETTO Principle: Efficiency-Thoroughness Trade-Off, Erik Hollnagel discusses why rational people sometimes do things that are considered irrational. For leaders in Naval Aviation, I think we can use ETTO as a tool to understand why "people won't just do what they are told." This is relevant in light of the fact that there are a high number of aviation mishaps that are due to personnel doing or performing non-standard practices, or cutting corners.

When corners are cut, decisions were made to cut those corners. Those decisions could have resulted from intentional violations, just trying to get the job done, pressure from the chain of command, a creeping organizational deviation from standards, lack of training, or a number of other factors. For whatever reason, that aviator or maintainer made a decision that resulted in a non-standard act. So how do we make decisions? In the ETTO principle, Hollnagel states that "rational" decisions are made with relatively no time pressures, when brainstorming, gathering data, and analysis can be accomplished before the decision is made (5-step Deliberate ORM process!). That is not reality though, because time is always a factor. As the time available to make decisions decreases, our cognitive decision-making processes change and we need to be more cognitively efficient (TCRM). What I mean by this, to put it in an aviators perspective, is the "OODA Loop" attributed to Colonel John Boyd: Observe, Orient, Decide, Act. The Naval Safety Center also provides the ABCD tool to help us make those time-critical decisions.

Let's look at how we can apply the ETTO principle to risk management decision tools. Due to time restrictions, the thoroughness of the deliberate ORM is sacrificed for the efficiency of the TCRM, ABCD, and OODA models. If we break down the OODA model further you could say the part of the model that demonstrates thoroughness is the first half, Observe and Orient. As the loop gets tighter and tighter the time for deciding and acting is either fixed or unknown, thus the time utilized for Observing and Orienting is reduced. It is reduced in order to have time to complete the action, because if the action is not complete in time, the "process" will be out of control. Putting this in context of the ETTO principle, thoroughness is reduced for the benefit of efficiency. Restrictions on time often cause a lack of thoroughness in decision making, based on humans not wanting to be

a “deer in head lights.” Applying this to every-day life, there is always a trade-off between efficiency and thoroughness (E and T), or one could say a BALANCE between E and T. If the process is not balanced then the result could be a mistake (not enough thoroughness or OO) or failure to complete the task (not enough efficiency or DA). Sailors and Marines apply this principle every day to complete tasks and make critical decisions in order to complete the mission. Sailors and Marines will often define their own BALANCE between E and T based on their perceptions of the Commanders Intent and the direction of their supervisors. That is one part of the ETTO principle. Another way to look at the ETTO principle is with parallels to the wild. First, let’s look at birds. A bird on the ground feeding is an example of the ETTO principle in action; the bird has to find food and eat (efficiency) but also has to look out for predators by popping up and keeping his head on a swivel (thoroughness). If the bird keeps his head down too long, a hawk (blue threat) could sweep down and ruin the bird’s day. If the bird does not eat enough (efficiency), he may eventually starve. So the bird is continually conducting ETTO based on the threat or perceived threat. Before a long migration, birds often have to stock up on energy and are often “head-down” more than normal (good time to be a hawk). The bird, however, makes a risk decision or changes the ETTO balance based on current mission requirements. Another example is to compare a gazelle in the wild to a cow in a pasture. A gazelle in the wild is again like the bird feeding on the ground, head-down to eat, then head-up on a swivel looking for the threat. A cow in the pasture has no threat, or perceives no threat, so the cow keeps his head down until one of two things happens—he eats all the grass, or he gets full. There is no head on a swivel. Again, the cow is making decisions based on ETTO and based on the fact that the cow does not perceive a threat. Unfortunately for the cow, he didn’t see the threat until he was eaten by the guy giving him food and water. Stupid cow. He is eating grass and doesn’t even know that’s exactly what makes him a predator’s potential dinner. Moral to the story...there always is a threat, whether you perceive it or not.

So what does the ETTO principle mean to Naval Aviation leaders and how can we apply it? First, I would ask, who is your wingman? As leaders we often go heads-down, unable to see the threat. Though unlike birds, we can have a wingman. It’s someone who backs us up and has their head on a swivel looking for the threat as we go heads down (i.e. similar to a phrase we are all familiar with...“Roger, you have the lead on the right, Brewton is 5 miles off the nose, I have the comms, switch button 12.”) We often get caught up and become heads-down in “efficiency” by chasing numbers, flights hours, mission completion, RFT rates, cost-wise readiness, while forgetting about thoroughness. Who in your squadron is focused on thoroughness? If everybody is heads-down, there are plenty of blue threats (hawks) out there that can ruin your day. Your Safety Officer, ASO, NATOPS, QAO and QAS have to be your primary wingmen. Without them keeping the thoroughness in balance with your efficiency, all of your Sailors and Marines will be trading-off thoroughness for efficiency. They will not see the threat; they will not worry about thoroughness. They are trying to get the job done. So, in hi-tempo, dynamic environments, they will become even more “efficient” by cutting corners, and that should worry Naval Aviation leadership, because the blue threat will then enjoy a great day (a bad day for us).

Are you, as a leader, rewarding the end result and not paying attention to the processes that provided that result? In Charting a Course to Organizational Excellence, final outputs are based on the intermediate outputs of the Command’s Attitudes and Values. Does your command value thoroughness? As always, don’t forget to tell your wingmen...“I gotta have more cowbell (thoroughness)!!!”



From the Director: **SMS for Dummies (Summer 2013 Issue)**

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The revised Naval Aviation Safety Program instruction will be hitting the streets soon, and it discusses the Safety Management System. In response to this change, the Safety Programs staff here at SAS, particularly LCDR Mike “Spock” Chenoweth (who is quoted below and has led the discussion on our Facebook page), has put together a quick overview on SMS.



“The Safety Management System, or SMS, concept is relatively new on the industrial landscape in general, and in the aviation world in particular. Transport Canada, Canada’s Civil Air Authority (our FAA equivalent), introduced the first aviation SMS in 2005. ICAO followed by mandating SMS for all member countries that same year. The FAA also introduced SMS in 2006 via an Advisory Circular on a voluntary basis for air carriers. In 2010, Congress mandated rule-making action be completed by the FAA by August 2012 that would require SMS for all part 121 air carriers. The rule, 14 CFR Part 5, is making its way through the routing chain and at last update was at the Office of the

Secretary of Transportation. DoD has directed the Naval Safety Center to implement SMS in aviation safety, and it will appear in the next version of 3750.6”. It is in the final stages of review at OPNAV.

“According to the ICAO Safety Management Manual, an SMS is “an organized approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures.” In Advisory Circular 150/5200-37, released February 28, 2007, the FAA defined SMS as “the formal, top-down business-like approach to managing safety risk. It includes systematic procedures, practices, and policies for the management of safety (including safety risk management, safety policy, safety assurance, and safety promotion).” It can be thought of as a table top supported by four elements, or legs: risk management, policy, assurance, and promotion; these have become known as the “four pillars” of SMS. The Naval Aviation Safety Program incorporates many of the pieces that make up an SMS, so it looks a lot like one already! Coupling what we do now with the holistic, integrated approach can help us leverage the tools we already have in order to further reduce mishap rates and, in turn, enhance mission effectiveness.”

“As Aviation Safety Officers, we are well aware of our governing document, the OPNAVINST 3750.6 series. Of course, there are quite a few more, including 3710.7 (NATOPS), 4790 (NAMP), and 3500.39 (ORM), just to name a few. Safety Policy, the first of the four pillars, is more than just the written instructions. ICAO’s Safety Policy elements are management commitment and responsibility, safety accountabilities, appointment of key safety personnel, coordination of emergency response planning, and SMS documentation (ICAO Safety Management Manual). The FAA’s slightly different spin transforms these into: importance of top management involvement, the roles, responsibilities, and relationships of safety management, procedures and controls, and the balance between safety and quality (FAA Advisory Circular 120-92A).” The Safety Policy Pillar is where your SMS starts. You will then implement, or promote it (Safety Promotion Pillar). You will implement methods of assuring the functionality of the SMS (Safety Assurance Pillar). Continuously you will manage risk in your squadron (Risk Management Pillar). You continuously “balance the tabletop” the pillars support. This is another way of saying, you continuously leverage the various components of your SMS as necessary to achieve safety in your squadron. The SMS/Four Pillars approach gives the ASO a framework to manage and leverage the program, and importantly, provides a language and reference that all participants in the SMS can quickly grasp and understand.

“A question arises: how does our existing ORM program mesh with Safety Risk Management (SRM) as it is defined by ICAO and the FAA? The ICAO Safety Management Manual states ‘safety risk management is a generic term that encompasses the assessment and mitigation of the safety risks of the consequences of hazards that threaten the capabilities of an organization...’ You could easily substitute ‘mission effectiveness of a squadron’ for ‘capabilities of an organization.’”

“The FAA characterizes SRM as “a systematic, explicit, and comprehensive approach for managing safety risk at all levels...” and details a five phase approach: describe the system, identify the hazards, determine the risk, assess and analyze the risk, treat the risk (i.e., mitigate, monitor and track) (AC 150/5200-37). The words are a little different, but our five-step risk management process is there so it appears that our understanding of ORM resonates with the definitions found in other regulatory publications.” The Navy-Marine Corps ORM program you know reconciles with the FAA publications!

“Although we call it the ORM Program, and within an SMS it is SRM, we don’t restrict the process to an operational or safety bin. As leaders, we seek to influence and improve decision making both on-duty and off, in training and in operational scenarios. Whether the enemy has a vote, you are going out on a day VFR fam flight, or the Sailor or Marine is headed home for the weekend, effective risk management and, by virtue, good decision-making are crucial to executing the mission. When it comes to implementing SMS don’t forget, “....the prescription is, MORE COWBELL!!”

1. Chenoweth, M. (2013), “Safety Management System”, Parts 1 through 3 of a 5-part series, <https://www.facebook.com/navysafetyschool>.

From the Director: **SMS from a Command Perspective...and I’m not Talking about TQL (Fall 2013 Issue)**

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Is SMS a new TLA that is going to bring about cultural change within Naval Aviation? Is it a new program (to go along with other great programs) that will solve world hunger if we can just motivate ourselves commit to it? Yes to the former and no to the latter. The Safety Management System (SMS) is not a “new” program. Even though the next version of the 3750 will utilize SMS pillars: Safety Policy, Safety Assurance, Risk Management, and Safety Promotion, in reality the current Naval Aviation Safety Program already has the elements of SMS. For the CO, SMS offers a formal approach and methodology to implement and improve safety programs within a command, enabling the improvement of your command’s safety culture. Every squadron safety program element should fortify the pillars of SMS. When a CO, or ASO and Safety Officer, evaluates the effectiveness of an element (ASAP, Anymouse, etc) of a safety program, he or she must apply the systematic approach offered under the SMS construct.

Let’s use an Anymouse program as our example. How could you use the systematic SMS approach to evaluate the effectiveness of a typical anonymous reporting program? Each pillar encourages specific, and sometimes challenging, questions.

Safety Policy. What is the CO’s level of personal commitment to the Anymouse program? Has the command established a policy for how to communicate hazards identified through the use of the program? Has the importance of the program been communicated to all members? Could a Sailor or Marine on the hangar bay easily articulate the value of the Anymouse program? Does he or she understand how it identifies hazards and why that identification is so important to the CO? This ties into the CO’s squadron safety policy, vision and philosophy, which is crucially important in guiding the behavior of Sailors and Marines. When violations are identified are the tenets of a “just culture” used to address them?



Safety Assurance. How often is the Anymouse program utilized? Are controls supervised? Are hazards such as unsafe acts identified and mapped against the DoDHFACS taxonomy? Is there a systematic, reliable procedure in place to identify potential preconditions, supervisory and organizational holes? Is the safety department tracking trends? Are potential trends discussed with the commanding officer for potential policy changes?

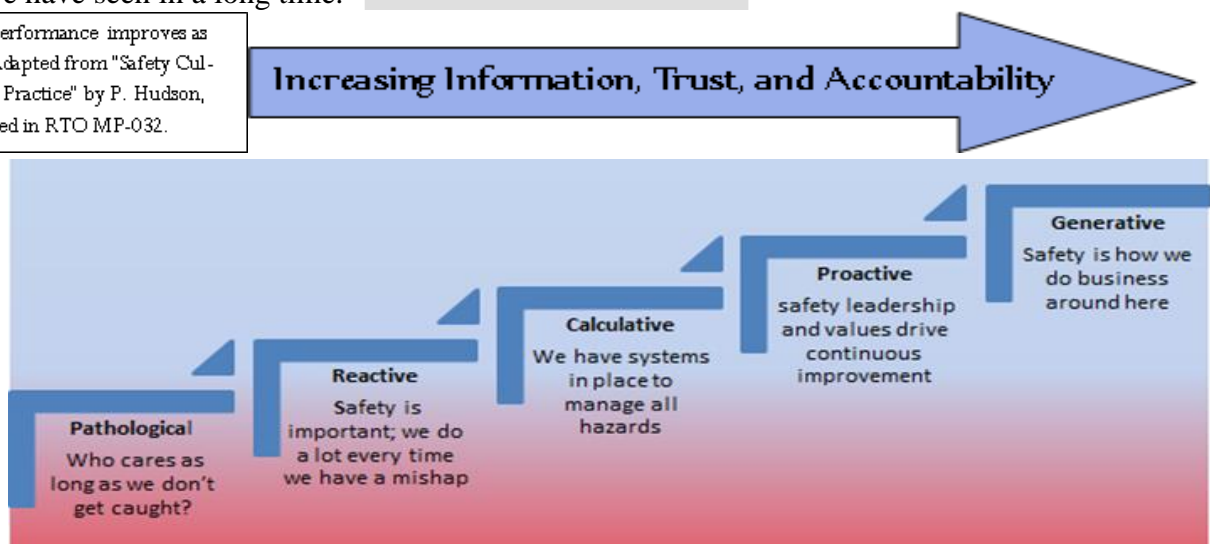
Risk Management. When hazards are identified through the Anymouse program, is appropriate ORM applied to mitigate the risk? Who is making risk decisions and implementing the controls? Are the controls supervised? Do hazards identified demonstrate that squadron members understand and are applying time-critical risk management? Are the four ORM principles supportive of the decisions the command makes, controls he/she establishes, and the procedures instituted to mitigate hazards? Do the decision makers have the requisite authority to make the necessary changes? Is someone charged with monitoring the effectiveness of the controls, ensuring they are working as intended to balance risk and benefits?

Safety Promotion. How do you promote your Anymouse program? Is your safety department getting buy-in on the program from the rest of the squadron? Does your safety department close the loop by providing feedback regarding hazards and implemented controls at safety stand-downs? Does the CO or XO ever weigh in with comments? Are Anymouse boxes easily identified and accessible. Does your CPO mess, NCOs, JOs, and ready room promote the use of Anymouse? In other words, are people outside of the safety department beating the drum too, or is the ASO a one-man band? Is there enough “cowbell” (our preferred instrument at SAS)? We can always use more! More buy-in from a wide range of sources is the “Hoopla” we hope our ASOs are inspiring at their units.

With SMS, you can apply this same critical eye and directed questions to any of the elements of your safety program, as we just did with Anymouse. It may just elevate the safety culture of your squadron. Patrick Hudson, renowned safety researcher and writer, suggests that an organization’s elevation from the calculative level (adequate programs) up to the proactive and generative levels (where safety becomes organic) requires SMS as pictured in Figure 1.

I strongly urge COs, Safety Officers and ASOs to evaluate the elements of your safety program through the systematic approach offered by the SMS construct. What a command does after the evaluation should all be focused on turning the culture into a more proactive one where time and resources are available for improvements before a mishap occurs. We talk about providing COs with tools and defenses to use against the blue threat and I think the SMS approach drives continuous improvement as one of the best defenses against blue threats we have seen in a long time.

Figure 1. Safety performance improves as culture matures. Adapted from "Safety Culture—Theory and Practice" by P. Hudson, Dec 1999, published in RTO MP-032.



From the Director: Hazards and Threats: Are they Equal? (Winter 2013 Issue)

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Hazards. Operational Safety and Safety Management Systems are highly dependent on Risk Management as a way to reduce mishaps. The idea is if you properly manage risk, you can achieve a higher state of readiness at the same cost. Naval Aviation’s primary risk management tool is Operation Risk Management (ORM). With the three levels (in-depth, deliberate, and time-critical), the four principles (accept risk when the benefit is greater than the risk, accept no unnecessary risk, anticipate and manage risk by planning, make risk decisions at the right level) and five steps (identify hazards, assess hazards, make risk decisions, implement controls, supervise), ORM reduces risk by identifying and controlling hazards. What is this concept of “hazards” and is it an appropriate term? Since I grew up in the 70s and 80s, when I hear the word “hazard” I always think of Hazzard County, with Bo and Luke Duke (and Daisy of course). But I digress; that of course isn’t what kind of “hazards” we are trying to control in ORM. As defined by ORM, a hazard is a “condition with the potential to cause illness, injury, death, property damage or mission degradation.” To put it more simply, what we are trying to identify are things that can hurt us, break our aircraft or even kill us. Wow, that actually sounds pretty threatening to me.

Threats. In Naval Aviation threats are numerous. I as a Maritime Patrol Aviator had to consider surface threats, subsurface threats and sometimes air-to-air threats. These threats were always thoroughly briefed. We developed, trained and practiced TTPs against these threats. In the simulator the entire crew would go through numerous scenarios to increase crew coordination in various tactical environments. That’s how we handled the Red Threat. I think we all have to be fairly happy about how we continually reinforce and supervise our controls on the Red Threat, but what about the Blue Threat? Do we have well-developed TTPs that we train and practice to combat the Blue Threat? From FY02 through FY13 Naval Aviation lost 178 aircraft and 212 aircrew to the Blue Threat. That is a significant number of losses. Losses during the same period to the Red Threat pale in comparison. Based on some quick empirical evidence we could reasonably say that hazards can be and are often more lethal than threats. Is that really true or are we incorrectly labeling our greatest threats as just “hazards,” or one of my other favorite terms “latent failures.” (OBTW: Some latent failures can kick the crap out of you and take you down faster than an SA-15)

Tactical Risk Management (TRM). In the paper “Tactical Risk Management– Defeating the Blue Threat” by CAPT Kenneth “Nubs” Neubauer, USN (ret), Nubs discusses how to bring the Weapons and Tactics Instructor (WTI, i.e. Red Threat expert) together with the ASO (Blue Threat expert) through a Tactical Risk Management educational package at MAWTS-1. To quote Nubs, “if we could introduce safety and risk management concepts to the tactical leaders of the Marine Corps in a new way, a way that causes them to view asset preservation as vital to mission success, they would then become allies of the squadron safety professionals.” I think that this approach is a unique way in which both the Blue and Red Threat risk can be reduced. We bring our training and tactics expert (WTI) together with our ORM, human factors, SMS and safety culture expert (ASO) and we address the two threats in a methodical, coordinated way. This partnership can help incorporate safety and risk management into everything we do.



Defense Video &
Imagery Distribution
System via AP Photo, 2
Harriers supporting
training at MAWTS-1

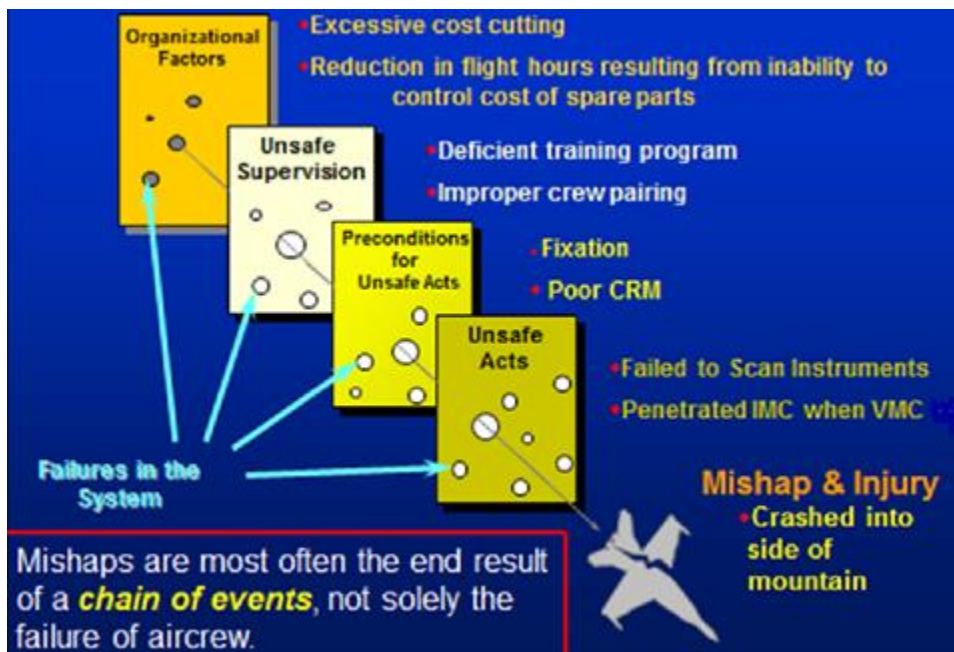


Figure 1. “Swiss Cheese Model” of accident causation adapted from Reason (1990).

Human Factors.

DoDHFACS is based on Reason’s Swiss Cheese model of accident causation (Figure 1) in which accidents are not due solely to unsafe acts but are also caused by some latent failures at the preconditions, supervisory or organization levels. Often (as many as 90%) operator-related unsafe acts are directly related to Crew Resource Management. In

the first 10 years of this millennium we see a large portion of the CRM-related causal factors tied closely to mission planning, communication, or failure to provide cross check/back-up (Figure 2). In fact you could say that 116 mishaps may have been prevented if these causal factors or latent failures were mitigated with controls that were properly supervised.

If you look in-depth at the DoDHFACS, you can see numerous Blue Threats throughout the system. Many of these Blue Threats can be combated through the utilization of CRM and ORM as some of our primary defenses against the Blue Threat (Figure 3, next page). When CRM and ORM are utilized effectively, better risk decisions are made in the time-critical realm.

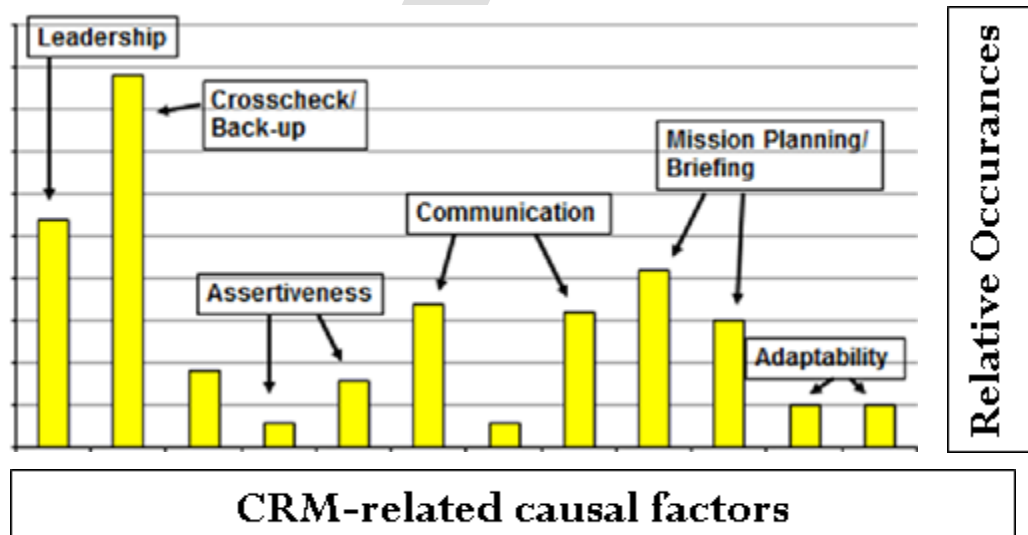


Figure 2. HFACS 2000-2009

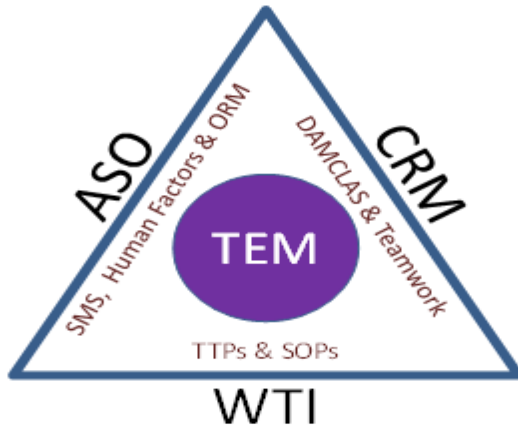


Figure 3. Blue Threat Mitigation Strategies

Time Critical Risk Management (TCRM). Currently our tool to make risk decisions in the time-critical realm is the ABCD mnemonic: Assess, Balance, Communicate, Do and Debrief. While I think that ABCD does give Sailors and Marines a good baseline on how to conduct time-critical risk management, I am unsure as to how well our ABCD model fits into CRM scenarios where change can happen faster than we can assess the risk and balance our resources. Often in these dynamic evolutions we rely on the OODA loop of tactical decision making, but how well does the OODA loop complement the synergy of teamwork that good CRM is designed to improve. In order to combat the Blue Threat we need to increase the decision-making ability of our aircrews; while doing that we also address the Red Threat. Blue and Red Threat defenses should not be bifurcated; they need to be addressed in a holistic approach.

Threat & Error Management (TEM). One of the newer developments in CRM is the advent and application of Threat and Error Management. The idea is that all the latent failures in the Swiss Cheese Model are threats. Poor community, squadron, or safety culture, poor scheduling, and vague policies are seen as “latent threats.” Environmental, organizational, individual, and team/crew factors are “overt threats.” These threats are addressed through threat management strategies and countermeasures in our mission planning and briefing. The next piece of TEM is Error Management. The concept concedes that errors will be made, focusing not just on preventing human error but identifying when an error happens, “capturing” the error, and returning the situation, crew, or aircraft to its desired state. Personally, I think TEM’s greatest application to military aviation is that it encourages all threats to be treated equally. Blue Threat mission planning isn’t relegated to something administrative, or less important. Equating the importance of the Blue Threat with the Red Threat would hopefully combat the attitude of “can-do easy,” which marginalizes how dangerous the Blue Threat really is.

The TEM TRIAD. So now that we understand that hazards are threats, that the Blue Threat has caused more losses of aircraft and lives than the Red Threat, what tools can we put in place? Commanders have three specialists within their squadrons that can become a guiding coalition on improving our crews’ ability to accomplish the mission with minimal loss of aircraft or life. They are the ASO, WTI and CRM experts within your squadron (Figure 4, next page). By working together they can fully implement TEM within a squadron in order to address the Blue and Red Threats. (Figure 5, next page).



Summary. TEM is a methodology that addresses TCRM in the dynamic environment of Naval Aviation. If we adopt and routinely practice TEM as much as we practice Red Threat TTPs, we will have more effective combat aircrews. TEM puts aircrews on a more proactive stance against the Blue Threat, putting in their frontal lobe the thought, “what is going try and kill me today?” I like to use the analogy of a man seeing a bear near the Grand Canyon. The man sees the bear as a threat, but only sees the log as a trip hazard. In his haste to get away from the bear he trips over the log and falls to his death down the side of the canyon. Moral of the story? Our myopic view of what is a threat can lead us to trip over hazards....

Figure 4. The mutual support of the people and programs within the Threat and Error Management (TEM) framework. Resources combine in the aviation unit to combat both Blue and Red threats.



Figure 5. (left) The process of combating the Blue and Red Threat with the ASO -WTI-CRM team. Blue text denotes ASO targets; green text denotes WTI targets; red text denotes CRM targets. Each team member utilizes specific strategies and countermeasures to combat the threats and support the error management process.

From the Director: How “Just” is your Culture? (Spring 2014 Issue)

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The CO and the Culture. Here at the SAS I do a lecture series on command climate and organizational culture. I discuss how the commander owns his command climate and how that climate can drive the squadron culture. In “Organizational Culture and Leadership,” Schein discusses how managers work within their organizational culture boundaries while leaders actively change the organization’s culture to fit their vision. How do leaders change their culture? Schein discusses six primary culture-embedding mechanisms:

- what leaders pay attention to
- how leaders react to critical incidents or crises
- observed criteria by which leaders allocate scarce resources
- role modeling, coaching and teaching
- observed criteria by which leaders allocate rewards
- observed criteria by which leaders select, promote and ex-communicate organizational members.

These are the primary methods in which CO’s change/reinforce the squadron’s culture. This is followed by the mechanisms which reinforce the organization’s culture. These reinforcement mechanisms consist of: an organizations structure, SOPs, rituals, stories, legends and the formal statements of the organizations philosophy, values and creed. The biggest take-away I get from Schein is, a CO’s actions make much more of a difference than what they say or write down. Schein asserts that formal statements are reinforcement mechanisms only. A CO’s primary squadron cultural-embedding mechanism is what Sailors and Marines observe from what the CO values, how the CO acts, and who the CO promote or punishes.

In “Leading Change,” Kotter points out that the best way to break through the forces that support the status quo is through vision. He discusses how the leader presents a vision, discusses it and “walks the talk” will get the buy-in to generate the sought-after change. We can all get Kotter. His 8 steps to cultural change inspires the imagination. It makes me think of POA&M’s, PBFTs, process management, and the way we change culture by utilizing all the program management tools we have. Schein brings out a different model, one that actually makes you say...*WHAT?* This culture change is tied more to me than to a plan? One that makes you think managing cultural change may not be as easy as an 8 step process. This culture change is based on how you as the CO make decisions every day. What do you value? Are your NCO/CPO’s being ranked higher if they are in production work centers or if they are in the QA shop? Where do you put your talent and ‘go-to’ people? Do you value efficiency over thoroughness? What about your Safety Petty Officers and NCOs? Are the below-average NCO’s put in Safety billets because that is where they will do the least damage? If time is a scarce resource (as most in Naval Aviation would agree), how much time do you as the CO give aircrew training vs. maintenance training? What do you pay attention to? Who do you reward and what do you punish? According to Schein, these are more active in supporting cultural change than any 8-step process. What you say is secondary to how you act, what you value and who you reward. If you value operations above all else, you will get operations above all else. Unfortunately you will not have the max readiness you could have achieved due to the potential loss of assets and personnel to mishaps. The CO saying “safety is my #1 priority,” while not personally applying risk management, is as dangerous as it is a cliché.

What is a Just Culture and how does it make us more mission-ready? The International Civil Aviation Organization (ICAO) has defined Just Culture as, "a culture in which frontline operators or others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, willful violations and destructive acts are not tolerated."

The question that Commanders should ask themselves is whether or not their current policies, actions, and reactions to crises are supportive of their safety program.

Some things to ponder:

- Is it more worthwhile to reduce mishaps by learning from incidents (from incidents being reported openly and communicated back up the chain of command) or by punishing Sailors and Marines for making mistakes?
- Does the threat of discipline increase a Sailor's or Marine's awareness of risks or at least increase one's interest in assessing the risks? Does this heightened awareness outweigh the learning through punishment?
- By providing safety information and knowledge, are people more interested in assessing the risks? Does this heightened awareness outweigh the learning through punishment?
- How does your command treat human error? Does your command make the Sailor or Marine aware of their mistake? Can the Sailor or Marine come forward if they make a mistake so that your command can learn from the event?
- A Just Culture supports learning from unsafe acts. Any event related to safety, especially human errors, must be considered as a valuable opportunity to improve operations through experience feedback and lessons learned.

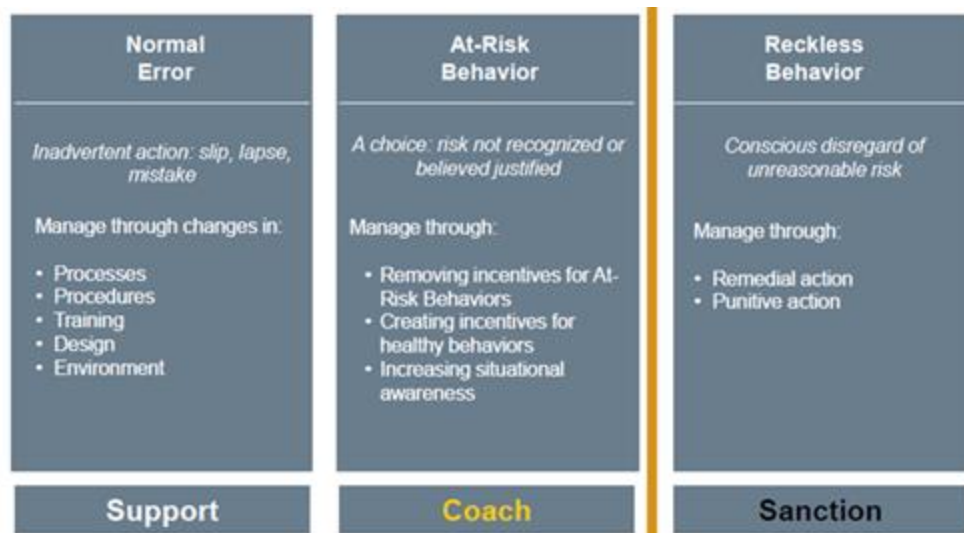
Near misses, HAZREPS and 'incidents' are considered by commands with good safety cultures as lessons which can be used to avoid more serious mishaps. There needs to be a strong drive to ensure that all events are reported and investigated to discover the root causes, and that timely feedback is given on the findings and remedial actions, both to the personnel within the squadron involved and other squadrons of the same T/M/S. This 'horizontal' communication is particularly important. As Reason stated, "organizations need to understand and acknowledge that people at the sharp end are not usually the instigators of accidents and incidents and that they are more likely to inherit bad situations that have been developing over a long period." This is particularly important today in Naval Aviation. We have gone through numerous transitions while being resource-limited due to budget constraints. Those two organizational forces can create new hazards that will be inherited by our Sailors and Marines. We need every Sailor and Marine to be a sensor against the potential "Blue Threat" and openly report errors, hazards and incidents. We need to speed up our OODA loop and get inside the Blue Threat's turn radius before we lose an aircraft or aircrew to potential bad situations.

Human error will never be eliminated, only moderated. The effectiveness of countermeasures depends on the willingness of individuals to report their errors, which requires an atmosphere of trust in which people are encouraged to provide essential safety-related information (Reason, 1997).

Finally, I would like to discuss David Marx and his book "Whack A Mole." Marx discusses how societies' "no harm, no foul" approach to personal accountability does not reduce behaviors that lead to mishaps or make our systems more resilient to human error. Marx takes a different look at unsafe acts than Reason. Marx notes three things that can lead to a mishap: human error, at-risk behavior, or reckless behavior. Human error is the honest mistake: hitting the wrong switch, skipping a step in the checklist, etc. These are known as skill-based errors in DODHFACS. At-risk behavior is when we cut the normal safety margin by bending the rules. Going 65 MPH with a 55 MPH speed limit is a good example of this. These speeders have no intention of causing an accident. They think they can continue to safely operate the vehicle with this reduced margin of safety. They do not see the hazard of this excess speed. This is known as a routine violation in the DODHFACS world. Reckless behavior is when we know the risk of a certain behavior, know the risk is not worth the reward, understand that the behavior could lead to a mishap, but do it anyway. To use the traffic analogy, this is the motorcyclist who drives 115 MPH in a 45 MPH zone. One of my students did that while I was XO of VT-3; needless to say we recommended attrition. In DODHFACS language we would say this is the extreme violation.

Based on what behavior caused the 'incident' we can apply tenets of Just Culture in order to embed it into the behavioral norms of our squadrons. Marx suggests that human error can never be eliminated. However, it is

up to the organization to identify where those errors will happen and put controls in place to reduce the frequency of those errors. Figure 1 shows management techniques for dealing with the three different behaviors discussed.



Having a Just Culture is vital to having a learning and reporting culture. Without a Just Culture you will not see hazards before they become mishaps. Without it you will not have a proactive safety culture and will remain reactive, like trying to “Whack a Mole!” Get it?

Three behaviors and management techniques, adapted from Marx.

From the Director: The Top of the Iceberg (Summer 2014 Issue)

CAPT Jody “Caveman” Bridges, USN – Director; jody.g.bridges@navy.mil

In the last 2 years I have written numerous articles for the Safety Sigma. My articles have discussed safety leadership, organizational culture, safety management systems, the blue threat, and other topics. Some of these topics have been abstract, like the Efficiency-Thoroughness Trade-Off (ETTO) principle (Spring 2013), or how to integrate your WTI, CRM-F and ASO to better combat blue and red threats (Winter 2013), or tools to develop a Just Culture (Spring 2014).

In this issue I wish to be more blunt. Since it is summer in Pensacola, with a 106 heat index as I type, I want to talk about something cold--icebergs. Regarding icebergs, I will discuss Delta R, how not to determine if a missing bolt was properly torqued, safety surveys and zip ties.

Icebergs. The iceberg analogy is an overused cliché which I myself reference frequently at the schoolhouse. Like most, I encourage leaders to “look beneath the waterline” while often disregarding the fact that there is a big freaking piece of ice floating above the water that is pretty darn easy to see.

If you don’t take action after you see this iceberg, you are going to have a bad day. My point is, yes, there is more ice under the water, but in reality we avoid running into icebergs by taking action after we see them. You might not see them if you are not provided with the proper tools, cut corners and rush. Anybody seen Titanic?

Delta R. As we remember back in aero class, Delta T predicts aircraft performance based on the difference between the actual temperature and a standard day. I would like to use a variation of that and define a Delta R: the difference between your actual resources and your actual readiness. If you have been through the ASO or ASC in the last couple years you know I discuss how command climate surveys have revealed concerns about units being overcommitted (ASD Issue Paper #118). Why is this? Is it new? Has this just started happening in the last few years? When I look back at my first deployment in 1991, I would wholeheartedly agree that we were overcommitted, chasing Soviet submarines and providing a detachment in support of Desert Storm. In

1994 in the Adriatic, flying armed surveillance and reconnaissance and overland ISR we were overcommitted. I would say that my entire 25-year career was spent with overcommitted units. I think this can be explained simply as “Delta R.” Some would call that efficiency, or a really cool word like Earned Value. But as a safety pro who understands organizational culture, I see more than earned value or efficiency. Maximizing the delta between readiness and resources is due in part to more efficient practices. A “git-er-done” attitude and “cutting corners,” both of which lower the margin of safety, help maximize the Delta R as well. As we strive to maximize readiness, at times we reward at-risk behaviors because Sailors and Marines receive “attaboys” when they routinely do more with less. Do we really know how much Delta R is being achieved because of these at-risk behaviors? Is that “readiness” real? Or are you about “ready” to lose a whole bunch of Delta R due an error chain which results in a mishap because of little to no safety margin? Remember, human error won’t go away, so we put processes and procedures in place to ensure that errors won’t result in mishaps. Our procedures are based on understanding the fallibility of human beings. When we try too hard to maximize our Delta R, ignoring these procedures, we have a hard time seeing the iceberg.



USCG Photo,
photographer
unknown (left)



USN Photo,
photographer D.
Kissel, USN
(right)

How not to determine if a missing bolt was properly torqued. This is added for comic relief but it is as frightening as it is funny. I recently read a HAZREP on a TFOA. I won’t mention the squadron name, to protect the innocent (and avoid any nasty emails I might get in the future), but it was released in mid-August with one accepted causal factor and one recommendation:

Accepted Causal Factor: Nozzle section outer augmentor separated from aircraft during flight.

Analysis: “*Properly torqued*” VEN link assembly bolts backed off during flight, causing the leading edge of nozzle section outer augmentor to lift into slipstream and depart from aircraft. All other VEN assembly bolts were found to be properly torqued.

So let me get this straight. You know the bolts that fell off in flight were properly torqued because the ones that did not fall off were properly torqued? Is that the analysis? I would put forth that using the sample of bolts that did not fall off wasn’t really representative of the group of bolts that did fall off. What is the lesson learned for that young maintainer? Properly torqued bolts fall off aircraft in flight? Is that acceptable in the Super Hornet? I would suggest maybe, just maybe, there is a deeper root cause than properly torqued bolts falling off the aircraft. Maybe the causal factor is similar to what Zeus discusses in his Summer 2014 Sigma article.

Safety Surveys. I really enjoy when CWO5 Kissel comes down from the Naval Safety Center to discuss maintenance safety with the ASOs and ASCs. I get to hear the latest aviation maintenance gouge from the fleet. The last time he stopped by, he had a smartphone full of pictures he took during recent safety surveys. They were pictures of icebergs, I’m sorry, non-standard practices.

These pictures were taken in the middle of the work day. Chiefs, senior NCO’s, and aviators walked by, but probably not the safety guy/gal. I can just hear the safety guy now. “You darn kids get off that Super Hornet and get some PPE on!” Or how about, “Where is your B4 stand son? You get your butt off that ladder and get

some proper support equipment!” Is that the problem with these pictures? Is the problem due to not having an engaged Safety Department? I would say no, and if you believe that the problem lies within the safety department then you probably believe that you can determine if a missing bolt was properly torqued by checking the ones that are still there.



No cranials (left). Wing-walker sitting on aircraft bay (top), photographer D. Kissel, USN

Lace Tie, MIL-HDBK-522 (right)



Zip Ties in aircraft (left and right); Improper splice (right). USN Photos, CWO5 D. Kissel, USN



If your safety department is running around making people comply with established procedures, what is it truly accomplishing? I see these pictures as icebergs, as indicators of what the behavioral norms are of that organization. Do you think a Sailor or Marine who does not follow procedures on PPE or support equipment is following all the other procedures to the “T”? You just “happen” to see the only non-standard procedure?

Nope, the behavior is just the part of it that is above the water line, that is visible, the “tip of the iceberg.” If the Safety Department is your police force, you may just be masking the bigger problem.

Zip Ties. So what is beneath the water? A lot. One thing that is below the water line in Naval Aviation is zip ties. Zip ties you say? That is impossible! Zip ties are awesome and we use them all the time with great success. However, it has been determined by the Joint Services Wiring Action Group (JSWAG) and the 505 manual that lace ties are supposed to be used in most applications, not zip ties.

There might be some zip ties on aircraft installed by the original equipment manufacturer (OEM) but any O-level maintenance requiring removal of zip ties calls for replacement with lace ties. Well, back to the icebergs and how much ice is beneath the waterline. The previous page has some more photos from fleet safety surveys.

It is a regular “Zipaplooza” of zip ties out there. There are also splices too close to connectors, bundles of wiring not properly secured, etc. A lot of ice is beneath that waterline.

In summary, Sailors and Marines who don’t comply with established procedures that were set forth to manage risk are symptoms. They are a visible symptom of organization-wide normalization of deviance. It requires all leadership within that organization to set the standard. The Chiefs, NCOs, ready room, and front office must all lead from the front and walk-the-talk when it comes to compliance. No one should ignore a Sailor or Marine who is clearly cutting corners.

Often we get “heads-down,” and get stuck in the office. When we do get out, it is for a mission, to get something done. When that happens we walk by icebergs. Skippers, remember there are plenty of icebergs out there, and if you are looking for them, you can see them and change course.

From the Director: The Good, the Bad, and the Ugly from FY14 (Fall 2014 Issue)

CAPT Jody “Caveman” Bridges, USN – Director; jody.g.bridges@navy.mil

Another fiscal year and a new blank slate of mishap stats arrived in October. What will the stats be on September 30th of 2015? Will we be looking at a banner year, with the lowest mishap rate in Navy Aviation, like September 30th of 2013? Will Naval Aviation have a good year in mishap reduction in FY15. What will that chart look like in 10 months? How much readiness will be lost to the “Blue threat”? Will all of our fellow squadron mates be with us? If we want the answers to be in the affirmative we need to remember the principles of proactive safety cultures. To prevent mishaps we must have ROBUST practices, DEDICATED people and BUY-IN from every corner of the enterprise. Having a good year in safety does not happen by simply willing it to be so. We must all be committed to it, act on it and live it every day.

So what is ROBUST practice? First, we must identify hazards, know what bit us in the past and ensure we have dedicated processes in place to manage risk. So let us take a hard look at that “you son of a b*tch” (must be said in the tone of voice of Lily Aldrin from “How I Met Your Mother”) year of FY14.

The GOOD. Well okay, not all of aviation had a bad year in safety in FY14. After reviewing commercial aviation it looks as if 2014 will be one of the best years in aviation safety with only 19 airliner (greater than 14 PAX) hull-losses (Class A FM) worldwide (Flight Safety Foundation). USAF had a good year as well with only 7 manned Class A flight mishaps. In the two years previous to that the mishaps were 20 and 19 respectively (AFSAS data). That is a huge drop in Air Force Class A flight mishaps. Marine Aviation also had a relatively good year dropping from a Class A flight mishap rate of 3.2 to a 4-year low of 1.94, reversing the negative trends of 2011 through 2013.

The BAD. US Army Aviation did not have a very good year in FY14. After finally achieving a sub-1.0 Class A flight mishap rate in FY13, the rate almost doubled from .81 in FY13 to 1.52 in FY14 (Oct 14 Army *Flightfax*). As stated in *Flightfax* “when analyzing this year’s mishaps and our operational trends, two factors are

immediately evident. The first is that we flew fewer flight hours during this fiscal year with a 12 percent reduction in total number of hours flown. The second factor is we reversed the trend of having more mishaps in combat than during training. In Fiscal Years 2010-13, 65 percent of the Class A mishaps occurred in combat. This year only 25 percent of the accidents occurred in combat, marking a significant shift in our operational environment and how leaders should evaluate their missions while operating at home station. A sizable percentage of the mishaps that occurred during this fiscal year can be attributed to just plain not paying attention: two incidents with UH60s ground taxiing into stationary objects, two occasions of pilots in command becoming task saturated during training and drifting into trees, one incident of an instructor pilot not managing the workload in the cockpit properly and allowing the aircraft to drift into an unsuitable landing profile and one occasion of a mid-air collision resulting from poor airspace integration.” Their skill-based errors seemed to rise when flight hours were cut by 12%.

The UGLY. Navy Aviation had 14 Class A flight mishaps in FY14 (10 more than FY13). The Class A flight mishap rate went from an all-time low of .48 in FY13 to the highest rate in the last 10 years at 1.68. Before I get too far into Navy FY14 data, let’s talk Naval Aviation rates to include both the Navy and Marine Corps.

The Navy and Marine Corps aviation team suffered 19 Class A flight mishaps during FY14. Of those, 9 were broadly categorized as maintenance or material-related events. This represents a marked increase in Class A flight mishaps related to maintenance & material cause factors. In the previous 5 years, less than 20 percent of aviation Class A flight mishaps fell into this category. During FY14, maintenance & material causal factor mishaps accounted for 47% of the Class A flight mishaps and aircrew human factors accounted for 53%. During FY13 those numbers were 17% for maintenance & material and 83% for aircrew human factors. The Naval Safety Center’s aviation survey team is concerned, based on recent surveys saying that a culture of “doing more with less” and “cutting corners” with 4790 procedures has become more routine. This observation correlates with an increase in Class A maintenance related mishaps. There have been 6 USN Class A flight mishaps this year with primarily maintenance/material cause factors. From improper safety wiring, to installing vital components incorrectly, this normalization of deviance was causal in almost 33% of Class A flight mishaps in FY14. Additionally, Class B & C maintenance-related events also increased to 75 Class B/C events costing \$12.3M.

For FY14, 2 of 9 Class A mishaps were directly attributed to maintenance. This number may increase, as there are still a couple of mishaps that are not finalized. Improper maintenance, failure to follow publications, and lack of supervision were noted. Mishap investigators are exceptional at getting to the root cause of mishaps where aircrew error was involved. However, we see SIR examples where the AMB stops asking “why” once it determines where the maintenance procedure went wrong. For example, many TFOA investigations do not discuss more than the failure of the part that fell off the aircraft. We should be analyzing compliance, supervision, etc., if they are part of the problem. Inexperience, lack of training, lack of proper tools, limited resources or poor command culture must be analyzed too. Each of these root causes require a specific, focused mitigation to ensure future mishaps are prevented. Failure to follow publications and lack of supervision are prevalent factors in most maintenance mishaps. In fact, during Aviation Safety Surveys around the fleet, we see maintenance being performed without publications in-hand or in-hand but not used.

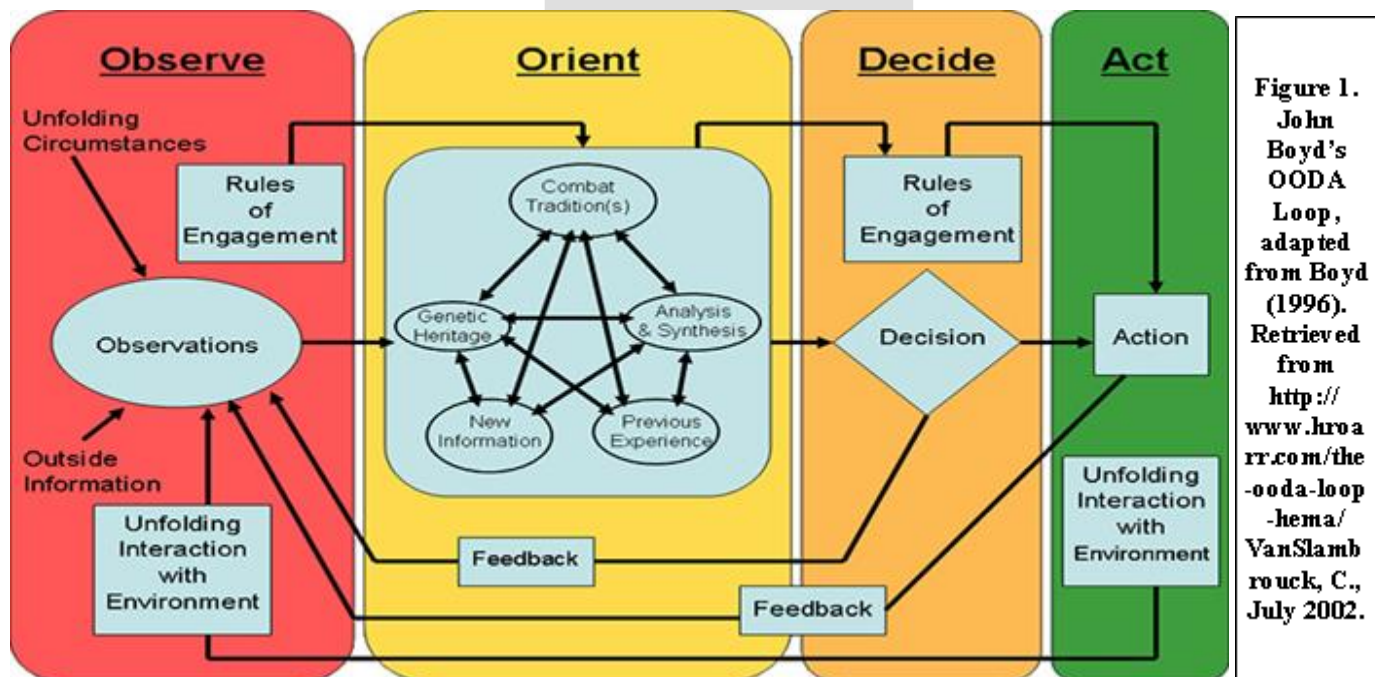
So what will we be saying on September 30th of 2015? Will we again have a flight mishap rate below 1.0? Will Bs and Cs decline? Or, will we look back at many avoidable mishaps again. I would prefer the former. Large improvements in Naval Aviation Safety are 100% achievable in FY15. It is based on the choices we make.

That choice must be to have ROBUST practices, to be those DEDICATED people who work every day to attain BUY-IN from every CORNER of the NAVAL AVIATION ENTERPRISE! What will it be in FY15, the Good, the Bad, or the Ugly?

From the Director: Naval Aviation SMS: What does SA Mean? (Winter/Spring 2015 Issue)

CAPT Jody "Caveman" Bridges, USN – Director; jody.g.bridges@navy.mil

What is SA? For most Naval Aviators it is one of the 7 critical skills of CRM: situational awareness. It has been beat into our heads since FAM 1. How many times have you heard “you need to pull your head out of your _ss” by your instructors? Actually I have said it a few times, but never actually heard it, maybe because I had such poor SA at the time! So why is maintaining SA so important? Good SA contributes directly to good decision making in the cockpit. Without good SA one cannot predict the future, thus described by Boyd's OODA loop.



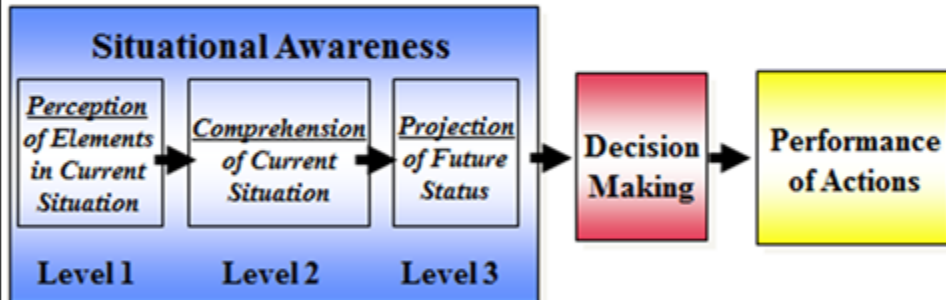
One must observe and orient before deciding and acting. Or one must gain SA. SA is defined as “the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future” Endsley (1995).

But SA also has another meaning, safety assurance, and is defined by the ICAO and FAA SMS as one of the four pillars/elements to any Safety Management System. I have been asked to speak at the International Society of Air Safety Investigators Southeast Region Chapter's annual meeting at the end of March. The topic they want me to discuss is SMS. So as I got my brief together I did a deep dive into both the ICAO SMS and the FAA SMS. Both are similar, both rely on 4 pillars/elements (safety policy, safety risk management, safety assurance and safety promotion). These 4 pillars provide a stable platform to a command's SMS, and one thing I found very interesting is that FAA circular 120-92B states, “SMS is a decision making system.” So why is safety assurance so important to SMS? The purpose of SA in SMS is to assist in decision making, very similar to the relationship of situational awareness to the 7 skills of CRM.

It is interesting how the SA from SMS plays a very similar role as situational awareness plays in flight decision making. SMS is based on fundamental, proven best practices across aviation safety. In SMS, your risk management is only as good as your safety assurance. Or as you might say, “you get what you inspect” and/or “trust but verify” (Figure 3).

Figure 2. Adapted from Endsley, M. (1995). "Toward a Theory of Situation Awareness in Dynamic Systems". *Human Factors*, 37(1), 32-64.

Model of Situational Awareness "3" Levels (Components, Parts)



Endsley, M. (1995)

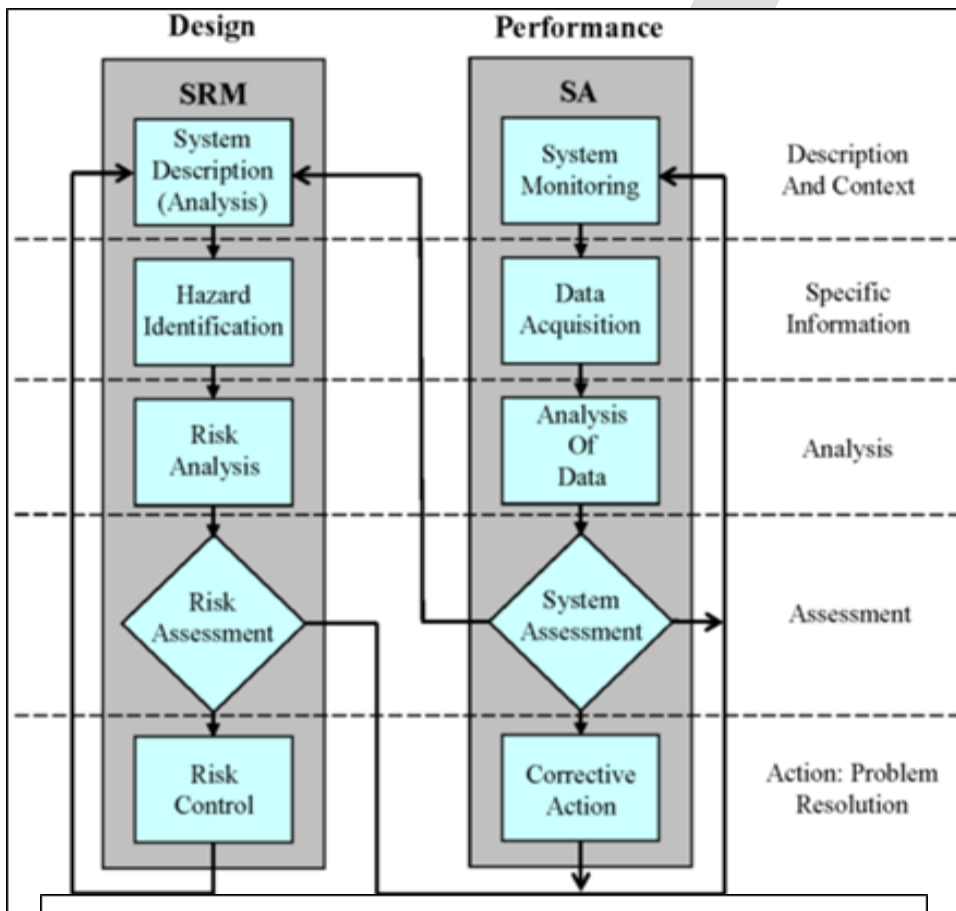


Figure 3. Adapted from "SMS for Aviation Service Providers." AC-120-92B. January 8, 2015.

So this begs the question, how robust is safety assurance within Naval Aviation? And who is responsible for safety assurance, the chain of command (COC) or the Naval Safety Center? If you read the Summer 2014 Safety Sigma you know how I feel. I believe it is not the safety department's responsibility to assure safety processes are being enforced within a unit. Based on the FAA definition of SMS they would agree. The FAA SMS states safety assurance is the responsibility of the "accountable executive." The accountable executive is defined as an individual who: is final authority over operations, controls the financial resources, controls the human resources, and retains the ultimate responsibility for safety performance. That sounds a lot like "train, man and equip" to me. For the Navy then to have a fully functional SMS, the TYCOM must be responsible for safety assurance through the type wings commanders to the squadron commanders. Bottom line, an outside entity cannot be responsible for safety assurance. It is directly tied to the commanders and the chain of command.

Let's look at the new 3750 (Naval Aviation SMS policy) in regard to Naval Aviation SA (Figure 4).

The safety assurance pillar in Naval Aviation has numerous processes and numerous process owners. Flag-level aviation commands and squadron commanders all own pieces and requirements of safety assurance. Under the FAA SMS model, SA is

the responsibility of the type commander and COC. Is it really their responsibility in our current Naval Aviation SMS? Is there a gap? Before I answer that let's take a look at some of the other pillars of the Naval Aviation SMS.

Safety Policy. It is interesting that in accordance with FAA SMS safety policy (Figure 5), the “3 Rs” of safety management are defined: roles, responsibilities and relationships. How are the roles, responsibilities and

relationships of Safety Assurance defined within our current Naval Aviation SMS? And whose responsibility is it to define these? IAW FAA SMS that again is the responsibility of the “accountable executive” to define these roles, responsibilities and relationships. Have we defined the roles of Wing ASO, Base ASO, or TYCOM ASO?

Safety Promotion. The School of Aviation Safety (SAS) turns 50 this year. For 50 years the school has trained squadron ASOs in the 3 R's of squadron safety management, how to identify hazards, manage risk, and how to investigate and report mishaps. Additionally, squadron commanders have been trained how to manage their safety programs within their organization. SAS education and training has stopped there, at the unit level. Is that a gap in Naval Aviation SMS safety promotion? I would say yes.

In the Navy, Type Wing Commanders and Type Commanders need to gain situational awareness as to the effectiveness of risk management within their organizations. They need to ensure robust safety assurance. How do we best do that? I would put forth that Naval Aviation needs to close the gaps at the wing level when it comes to safety assurance by defining the roles, responsibilities and relationships of Wing and Base ASOs and educate them to create standardization in safety assurance across Naval Aviation. Figure 6 Is an initial draft of a 5-day course that is in development here for Aviation Safety Managers.

SMS Safety Assurance Components

MFOQA, ASAP, AnyMouse, Cultural Workshop, Safety Survey, CSA, MCAS, MPA, AMI, AMCI, Investigations, Reporting, SSWG, ORM, CRM, Fatigue Management, HFCs and HFBs

Figure 4. Naval Aviation SMS Safety Assurance Components as taught at the Naval School of Aviation Safety

FAA SMS Safety Policy Components

1. Importance of Top Management Involvement
2. Three R's of Safety Management
 - Roles
 - Responsibilities
 - Relationships
3. Procedures and Controls
4. Safety and Quality

Figure 5. FAA SMS Safety Policy Components as taught at the Naval School of Aviation Safety

Course Overview.

The course will include the following units of instruction:

- Introduction and Course Overview
- Safety Management Systems
- Reporting
- Agents and Tools
- Other Topics and Related Disciplines

	Mon	Tue	Wed	Thur	Fri
0800	Course Intro	Agents I	Agents II	ASAP	HAZREPS/BASH
0900	SMS Overview	Endorsemts	Fall Protect	Pulse+/MFOQA	Misc Topics
1000	Reporting	Inspections	Agents III	ESAMS	Safety Ldrship
1100	Reporting	Safety Surveys	Agents IV Bash & USDA	ASAP Lab	Figure 6. Proposed ASM Course Daily Schedule
1300	ORM	CSA/MCAS	Mishap Resp Plans	Agents V Mtgs & ASC	
1400	CRM	5102	Aeromed	Endorse Lab	
1500	Safety Awards	5102	DoDHFACS	Endorse Lab	
1600	WESS/WAMHRS	Endorse Exercise	Endorse Exercise	Endorse Review	

Dr. “Opus” Hahn, our Associate Director of Academics, has been working with Base and Wings ASOs to develop this curriculum, both because we saw a need at the school house and a demand signal for follow-on education into the roles and responsibilities was received from Base/Wing ASOs. The course is designed as a follow-on to the ASO course for officers designated to serve in base, wing, or staff ASO positions. The target date for piloting this course is summer of 2015. The ultimate goal is having the course available for the fleet in FY16.

This course is a start in filling the current gap in the Naval Aviation SMS SA pillar. It will not only assist the chain of command in acquiring situational awareness of the effectiveness of their risk management processes but will greatly assist in safety process improvement as we continue down the road to a more proactive safety culture.

Finally, I say farewell. I am off to Atsugi, Japan to be the Deputy Commander of Fleet Air Forward flying C-12s and generally loving life. The family wanted one last great Navy adventure before we closed the chapter as a Navy family, so off we go. To the COs who have gone through the course in the last couple of years it has

been a real pleasure to work with you. I look forward to seeing you out in the fleet. To the ASOs who have come through as well, if you want to fly C-12s overseas drop me a line. I can never have too many ASOs nearby. I am very happy I had the opportunity to be Director of SAS, and during my tenure I think we have moved the ball forward: realigning under the Naval Safety Center, becoming more responsive to the fleet, helping draft the Naval Aviation SMS, and developing the Aviation Safety Manager Course for Wing and Base ASOs. I thank my entire staff. What great people we have here at SAS! They truly have made this place the Blue Threat Weapons School!

The **Safety Sigma** is published quarterly by the Naval School of Aviation Safety located at NAS Pensacola, Florida. If you have a question for the staff, or are interested in attending Aviation Safety Officer, Aviation Safety Command, or Crew Resource Management Instructor training, please visit our website at

<http://www.public.navy.mil/comnavsafecen/Pages/aviation/SAS/index.aspx> or call (850) 452-3181. **If you would like to submit** a short article for publication, please contact LT Jim “Pugsly” Bates at (850) 452-5255 or james.a.bates3@navy.mil

Also, if you are receiving multiple emails from us due to attendance at more than one class (ASO and ASC) or would like to be removed from future emails, please email LT Bates (info above) with name and approximate dates of your class attendance. Thank you.